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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,278	07/10/2003	Stephen Varghese Samuel	FGT 1690 PA	2451

7590 06/27/2005

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EXAMINER	
TRAN, DALENA	
ART UNIT	**PAPER NUMBER**
3661	

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/617,278	SAMUEL ET AL.	
	Examiner	**Art Unit**	
	Dalena Tran	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 28 March 2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-23 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Notice to Applicant(s)

1. This office action is responsive to the amendment filed on 3/28/05. As per request, claims 1, 3, and 19-23 have been amended. Claims 1-23 are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 recites the limitation "said third offset correction signal" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-6, 8, 13, 15, 19-20, and 23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Madau et al. (6,314,329) in view of Winner et al. (6,810,311).

As per claim 1, Madau et al. disclose a sensor offset correction method for a vehicle comprising: generating a first offset correction signal for a vehicle dynamic sensor at a sensor power-up (see the abstract), and generating a second offset correction signal for said vehicle dynamic sensor when the vehicle is moving; and correcting vehicle dynamic sensor in response to at least one of said first offset correction signal and second offset correction signal (see column 1, lines 35-55). Madau et al. do not disclose

averaging maximum and a minimum of offset values acquired during vehicle operation. However, Winner et al. disclose averaging maximum and a minimum of offset values acquired during vehicle operation and using average of maximum and minimum as first offset correction signal (see columns 2-3, lines 40-17; columns 5-6, lines 62-63; and columns 10-11, lines 20-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al. by combining averaging maximum and a minimum of offset values acquired during vehicle operation for accurately determining the offset value of the output signal of a vehicle sensor.

As per claim 2, Madau et al. disclose generating a third offset correction signal for vehicle dynamic sensor when the vehicle is at rest; and correcting vehicle dynamic sensor in response to third offset correction signal (see columns 3-4, lines 20-18).

As per claim 3, Madau et al. disclose a sensor offset correction method for a vehicle comprising: generating a first offset correction signal for a vehicle dynamic sensor at a sensor power up (see the abstract), generating a second offset correction signal for vehicle dynamic sensor when the vehicle is moving, and correcting vehicle dynamic sensor in response to at least one of first offset correction signal and second offset correction signal (see column 1, lines 35-55). Madau et al. do not disclose delaying generating third offset correction signal. However, Winner et al. disclose delaying generating third offset correction signal thereby reducing influence of transient signals on third offset correction signal (see column 8, lines 8-49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al. by combining delaying generating third offset correction signal for reducing error signal so to accurately perform offset correction for the vehicle.

Also, as per claim 4, Winner et al. disclose wherein generating said third offset correction signal comprises: generating third offset correction signal in response to vehicle dynamic sensor indicating a change in lateral acceleration or longitudinal acceleration (see column 5, lines 6-61).

As per claims 5-6, Madau et al. do not disclose delaying generating third offset correction signal. However, Winner et al. disclose delaying generating third offset correction signal until vehicle turning has ceased, and compensating for an initialization occurring during a vehicle turn table event when the vehicle is standing still following said initialization (see column 8, lines 8-49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al. by combining delaying generating third offset correction signal for reducing error signal so to accurately perform offset correction for the vehicle.

Also, as per claim 8, Winner et al. disclose generating second offset correction signal comprises: pausing offset compensation in response to continuous vehicle turning for a specified time (see columns 8-9, lines 50-42).

As per claim 13, Madau et al. disclose initializing sensor; and substantially eliminating D.C. bias present at initialization of sensor (see column 3, lines 20-37).

As per claim 15, Madau et al. disclose generating first offset correction signal comprises: in response to vehicle moving prior to completion of initialization, averaging offset values previously acquired and using them as said first offset correction signal (see column 1, lines 35-55).

As per claim 19, Madau et al. do not disclose an accuracy threshold. However, Winner et al. disclose generating a third offset correction signal for vehicle dynamic

sensor when the vehicle is at rest and vehicle dynamic sensor is below an accuracy threshold (see columns 6-7, lines 63-33); and correcting vehicle dynamic sensor in response to first offset correction signal, second offset correction signal and third offset correction signal (see columns 7-8, lines 34-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al. by combining generating a third offset correction signal for vehicle dynamic sensor when the vehicle is at rest and vehicle dynamic sensor is below an accuracy threshold for determining an acceptable range for the vehicle offset correction signal.

As per claim 20, Madau et al. disclose a sensor offset correction method for a vehicle comprising: generating a first offset correction signal for a vehicle dynamic sensor at a sensor power-up in response to a DC bias (see the abstract; and columns 2-3, lines 64-14), generating a temperature drift signal for sensor, and generating a second offset correction signal for vehicle dynamic sensor when the vehicle is moving in response to temperature drift signal (see column 2, lines 30-51). Madau et al. do not disclose an accuracy threshold. However, Winner et al. disclose generating a third offset correction signal for vehicle dynamic sensor when the vehicle is at rest and vehicle dynamic sensor is below an accuracy threshold (see columns 6-7, lines 63-33); correcting vehicle dynamic sensor in response to first offset correction signal, second offset correction signal and third offset correction signal (see columns 7-8, lines 34-7), generating third offset correction signal in response to vehicle dynamic sensor indicating a change in lateral acceleration or longitudinal acceleration (see column 5, lines 6-61); delaying generating third offset correction signal until vehicle turning has ceased (see column 8, lines 8-49), and compensating for an initialization occurring during a vehicle

turn table event when the vehicle is standing still following initialization (see column 10, lines 20-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al. by combining generating a third offset correction signal for vehicle dynamic sensor when the vehicle is at rest and vehicle dynamic sensor is below an accuracy threshold for determining an acceptable range for the vehicle offset correction signal.

Claim 23, is a system claim corresponding to method claim 20 above. Therefore, it is rejected for the same rationales set forth as above.

5. Claims 7, and 17-18, are rejected under 35 U.S.C. 103(a) as being unpatentable over Madau et al. (6,314,329), and Winner et al. (6,810,311) as applied to claim 1 above, and further in view of Schiffmann (6,038,495).

As per claim 7, Madau et al. disclose generating a filtered yaw rate of zero (see the abstract, lines 1-4). Madau et al. do not disclose generating a filtered roll rate of zero. However, Schiffmann discloses generating a filtered roll rate of zero (see columns 5-6, lines 55-3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al. by combining generating a filtered roll rate of zero to prevent vehicle rollover condition.

Also, as per claims 17-18, Schiffmann discloses compensating for a valid signal bias in vehicle dynamic sensor, wherein compensating for valid signal bias comprises adjusting an electrical long terms bias over time with a minute adjustment at each sampling time or a sliding mode control (see at least columns 6-7, lines 42-59).

6. Claim 12, is rejected under 35 U.S.C. 103(a) as being unpatentable over Madau

et al. (6,314,329), and Winner et al. (6,810,311) as applied to claim 1 above, and further in view of Weaver et al. (6,600,985).

As per claim 12, Madau et al., and Winner et al. do not disclose pausing an offset correction when an RSC sensor disturbance flag is set or during events from at least one of ABS, AYC, TCS, or RSC. However, Weaver et al. disclose pausing an offset correction when an RSC sensor disturbance flag is set or during events from at least one of ABS, AYC, TCS, or RSC (see column 14, lines 15-52). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al., and Winner et al. by combining pausing an offset correction when an RSC sensor disturbance flag is set or during events from at least one of ABS, AYC, TCS, or RSC to compensate for drift in the output of the sensor signals.

7. Claim 9, is rejected under 35 U.S.C. 103(a) as being unpatentable over Madau et al. (6,314,329), and Winner et al. (6,810,311) as applied to claim 1 above, and further in view of Weaver et al. (6,600,985), and Bustgens et al. (6,718,279).

As per claim 9, Madau et al., and Winner et al. do not disclose compensating for roll rate value signal continuously by an amount substantially equal to a maximum temperature drift rate of roll rate value signal. However, Weaver et al. disclose detecting a non-zero roll rate value signal (see column 2, lines 36-60; and column 3, lines 20-30), compensating for roll sate value signal continuously by an amount substantially equal to a maximum temperature drift rate of roll rate value signal (see columns 6-7, lines 34-14). Madau et al., and Winner et al. also do not disclose compensating for yaw rate value signals continuously by an amount substantially equal to a maximum temperature drift rate of roll rate value signal. However, Bustgens et al. disclose detecting a non-zero yaw

rate value signal (see the abstract; and column 3, lines 16-37), and compensating for roll sate value signal continuously by an amount substantially equal to a maximum temperature drift rate of roll rate value signal (see column 2, lines 1-46; and columns 3-4, lines 58-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al., and Winner et al. by combining compensating for roll rate, and yaw rate value signals continuously by an amount substantially equal to a maximum temperature drift rate of roll rate value signal to adjust sensor offset to maintain vehicle stability.

8. Claim 21, is rejected under 35 U.S.C. 103(a) as being unpatentable over Madau et al. (6,314,329), and Winner et al. (6,810,311) as applied to claim 20 above, and further in view of Weaver et al. (6,600,985), Bustgens et al. (6,718,279), and Pastor et al. (5,446,658).

As per claim 21, Winner et al. disclose generating second offset correction signal comprises: pausing offset compensation in response to continuous vehicle turning for a specified time (see columns 8-9, lines 50-42). Madau et al., and Winner et al. do not disclose compensating for roll rate value signal continuously by an amount substantially equal to a maximum temperature drift rate of roll rate value signal. However, Weaver et al. disclose detecting a non-zero roll rate value signal (see column 2, lines 36-60; and column 3, lines 20-30), compensating for roll sate value signal continuously by an amount substantially equal to a maximum temperature drift rate of roll rate value signal (see columns 6-7, lines 34-14). Madau et al., and Winner et al. also do not disclose detecting a non-zero yaw rate value signal. However, Bustgens et al. disclose detecting a non-zero yaw rate value signal (see the abstract; and column 3, lines 16-37). Madau

et al., and Winner et al. do not disclose a road bank angle signal. However, Pastor et al. disclose detecting a non-zero value for a road bank angle signal, adjusting a lateral acceleration offset, such that lateral acceleration drives road bank angle signal to zero (see the abstract; and columns 3-4, lines 48-37), detecting a non-zero value for a average road pitch angle signal; and adjusting a longitudinal acceleration offset, such that lateral acceleration drives road bank angle signal to zero (see columns 1-2, lines 20-7; columns 2-3, lines 47-47; and columns 4-5, lines 38-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al., and Winner et al. by combining compensating for roll rate, and yaw rate value signals continuously by an amount substantially equal to a maximum temperature drift rate of roll rate value signal, and a road bank angle signal to adjust sensor offset to maintain vehicle stability.

9. Claim 22, is rejected under 35 U.S.C. 103(a) as being unpatentable over Madau et al. (6,314,329), and Winner et al. (6,810,311) as applied to claim 20 above, and further in view of Winner et al. (6,704,631), Weaver et al. (6,600,985), and Schiffmann (6,038,495).

As per claim 22, Madau et al. disclose initializing sensor (see column 3, lines 19-36), in response to the vehicle moving prior to completion of initialization, averaging offset values previously acquired and using them as said first offset correction signal (see column 1, lines 35-55). Madau et al., and Winner et al. ('311) do not disclose pausing offset correction. However, Weaver et al. disclose pausing offset correction when an RSC sensor disturbance flag is set or during events from at least one of ABS, AYC, TCS,

or RSC (see column 14, lines 15-52). Madau et al., and Winner et al. ('311) do not disclose generating first offset correction signal such that a filtered roll rate is approximately zero. However, Schiffmann discloses generating first offset correction signal such that a filtered roll rate is approximately zero (see columns 6-7, lines 43-59). Madau et al., and Winner et al. ('311) do not disclose generating first offset correction signal such that a filtered yaw rate is approximately zero. However, Winner et al. ('631) disclose generating first offset correction signal such that a filtered yaw rate is approximately zero (see column 7, lines 3-20), and generating first offset approximately equal to a previously stored sensor signal from a previous driving cycle (see columns 2-3, lines 34-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al., and Winner et al. by combining pausing offset correction, generating first offset correction signal such that a filtered roll rate, and yaw rate is approximately zero for reducing error signal and determining a corrected offset value which represents the offset of the output signal of the vehicle.

10. Claims 14, and 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Madau et al. (6,314,329), and Winner et al. (6,810,311) as applied to claim 1 above, and further in view of Schiffmann (6,038,495), and Winner et al. (6,704,631).

As per claim 14, Madau et al. (6,314,329), and Winner et al. ('311) do not disclose generating said first offset correction signal such that a resultant filtered roll rate, and yaw rate is approximately zero. However, Schiffmann disclose generating said first offset correction signal such that a resultant filtered roll rate is approximately zero (see columns 5-6, lines 55-3; columns 6-7, lines 43-59; and column 9, lines 11-40). Winner

et al. ('631) disclose generating said first offset correction signal such that a resultant filtered yaw rate is approximately zero (see column 7, lines 3-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al., and Winner et al. ('311) by combining generating said first offset correction signal such that a resultant filtered roll rate, and yaw rate is approximately zero for accurately correcting vehicle offset signals.

As per claim 16, Winner et al. ('631) disclose generating first offset approximately equal to a previously stored sensor signal from a previous driving cycle (see columns 2-3, lines 33-2).

11. Claims 10-11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Madau et al. (6,314,329), and Winner et al. (6,810,311) as applied to claim 1 above, and further in view of Pastor et al. (5,446,658).

As per claims 10-11, Madau et al., and Winner et al. do not disclose a road bank angle signal. However, Pastor et al. disclose detecting a non-zero value for a road bank angle signal, adjusting a lateral acceleration offset, such that lateral acceleration drives road bank angle signal to zero (see the abstract; and columns 3-4, lines 48-37), detecting a non-zero value for a average road pitch angle signal; and adjusting a longitudinal acceleration offset, such that lateral acceleration drives road bank angle signal to zero (see columns 1-2, lines 20-7; columns 2-3, lines 47-47; and columns 4-5, lines 38-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Madau et al., and Winner et al. by combining compensating for roll rate, and yaw rate value signals continuously by an amount substantially equal to

a maximum temperature drift rate of roll rate value signal, and a road bank angle signal to adjust sensor offset to maintain vehicle stability.

Remarks

12. Applicant's argument filed on 3/28/05 has been fully considered. The allowance of the claims in the last office action has been withdrawn. Upon updated search, the new ground of rejection has been set forth as above.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner
Dalena Tran

Dalena Tran

June 22, 2005